

Exhibit F – Leverage

Commonwealth of Massachusetts

ExhibitFLeverageMA.pdf

## **Link to DropBox/Exhibit F:**

[https://www.dropbox.com/sh/k1x7vq7yn10hkcy/AACEEuEnxHpSV1Kyz2yK\\_GGGa?dl=0](https://www.dropbox.com/sh/k1x7vq7yn10hkcy/AACEEuEnxHpSV1Kyz2yK_GGGa?dl=0)

## **Exhibit F – Leverage**

### **Outcomes**

**Longevity and Magnitude.** MA is committed to the recovery of communities from disasters and to strengthening their resilience and preparedness to climate change. In developing resiliency solutions, the MA Team will seek long-lasting solutions that require little ongoing maintenance. An example is the U.S Army Corps of Engineers' Charles River Natural Valley Storage Area which involved the acquisition and permanent protection in the 1970s of 17 scattered wetlands in the middle and upper watershed (8,103 acres) for the purpose of flood protection.

**Co-Benefits.** DOER's Community Clean Energy Resiliency Initiative promotes clean energy and reduction of greenhouse gas emissions. As an example of a leveraged green infrastructure project with co-benefits, EEA and other members of the MA Team, with local grass-roots environmental justice partners, are re-planting trees in the Springfield target area and in surrounding low- and moderate-income cities of Chicopee and Holyoke to aid in the recovery of urban trees lost in past disasters. Team members completed extensive community engagement including public meetings and door-to-door outreach about tree planting benefits in affected neighborhoods and have used an efficient method to re-plant 15,000 trees. This approach to urban environmental restoration offers co-benefits by alleviating flooding, water pollution, treatment costs, energy costs, urban heat island effects and air quality impacts. A tree pit reduces stormwater equivalent to the reduction of 1,265 square feet of impervious surface during a 1" storm (DropBox/Exhibit F/U.S. EPA 2015 draft.pdf). Studies show the relationship between urban tree canopy and household heating and cooling costs including one that showed that a 4% reduction in urban tree canopy would raise home cooling energy use by 2.9% (DropBox/Exhibit F/Potyondy 2013.pdf). Also, EEA's Department of Energy Resources (DOER) is completing a comprehensive assessment of the feasibility of locating a wood pellet plant in the region.

**Sustainability.** The MA Team will work with the target areas and throughout the state to develop strategies that encourage sustainability. The example above demonstrates how a community tree planting effort is both environmentally sustainable by providing water quality benefits, and flood and storm hazard mitigation; and financially sustainable by reducing heating and cooling cost, providing low cost heat options (via local wood pellets harvested to improve forest resilience) and increasing local job opportunities in the forestry sector.

**Vulnerable Populations and Opportunity.** The target areas in this application represent two tourist destinations, one rural hill-town, and one industrialized area. The MA Team will look for projects that address past losses and future threats, and also those that provide an opportunity to stimulate the economy and household wealth creation. For example, as a follow-up to the MassDOT survey of 1,000 culverts in the Deerfield River watershed, fixing and upgrading of the culverts and the surrounding supporting landscapes would result in new construction employment and other types of jobs; reduced risk of economic disruptions; greater reliability of access to important economic and town centers. Tree planting and green infrastructure installation could result in more forestry, engineering, public works, and planning jobs.

**Success and Evaluation Measures.** The MA Team will develop meaningful measures that are relevant to local populations and based on best available information. We will measure success of the program by examining improvements in local circumstances such as employment opportunities, environmental conditions, and repaired infrastructure. But we will go well beyond that, looking for increased resilience of our vulnerable populations to the increasing frequency and severity of disasters that MA faces such as number of new green infrastructure projects underway; communities participating in clean energy programs; trees planted; stream miles with stabilized banks; culverts resized and replaced; and households at reduced risk of flooding. We will work with our communities to develop measures that are cost-effective, fair, responsive and easily understood.

**Leverage**

**Partners.** With the state as the lead applicant and 5 RPAs representing over 200 communities, our partners have considerable experience working with communities and organizations at the local level. We regularly work with environmental justice groups such as Nuestras Raices in Holyoke, Valley Opportunity Council in Chicopee, ReGreen Springfield, and Chelsea Collaborative. In addition, MA Rivers Alliance, MA Bays Estuaries Program, and The Boston Harbor Association are local organizations that have developed strong partnerships with residents and other organizations.

**Co-Benefits and Cost Efficiencies of Financing.** MA is experienced in using streams of public money innovatively to serve multiple purposes. It uses RGGI funds to pay for tree planting. The Natural Valley Storage Area project described above was developed to respond to local opposition to hard-scaped flood-proofing that would have damaged the environment. This alternative to a series of dams was more cost-effective to establish, requires no maintenance, and is a local recreational attraction. Improvement of the local beaches and roadways in the Oak Bluffs target area may encourage tourists who arrive by ferry to stay longer and spend some money before travelling to other towns on the Vineyard. Improvements to stream banks and floodplains in the Deerfield River watershed will help protect public water supplies, and enhance recreation and fishing.

**Committed Leverage.** Commitments at the state, regional, and local levels of government that broaden the reach of our resiliency objectives are evident through MA's recent multi-Secretariat initiative to enhance climate resiliency and preparedness. Committed leveraged resources, which far exceed HUD's threshold of \$250,000, are: *EEA agency DOER's Community Clean Energy Resiliency Program* to promote renewable energy in communities; *EEA's Dam and Seawall Repair and Removal Fund* to protect against flooding; and *EEA's CZM's Coastal Community Resilience Program* to encourage resilience in coastal communities to storms/sea level rise, and *Green Infrastructure Pilot Program* for flood control and storm surge reduction projects involving measures such as dune enhancement, marsh restoration. See Attachment B for documentation of this leverage.